

IN THE CLAIMS:

Please cancel claims 20-27 without prejudice

Claims 20-27(Canceled).

28. (previously presented) A semiconductor die package, comprising:

a semiconductor die having one or more bond pads on a top surface for providing terminals to one or more sensors, in particular optical sensors, within the top surface;

a die carrier which does not extend in front of said sensors and which has one or more bond pads comprising bond terminals and having external lead bonds, the bond pads of said die carrier and the bond pads of said die determining between them an annular interface area and being coupled in this area;

a sealing ring encapsulating said interface area; and

a packaging material encapsulating the bottom surface of the die carrier and a bottom surface of the semiconductor die.

29. (previously presented) The semiconductor die package according to claim 28, wherein the die carrier has a pre-printed frame and each external terminal comprises a wire lead.

30. (previously presented) The semiconductor die package according to claim 29, further comprising:

a cap having a second opening similar in size to the first opening, the cap being attached to the top surface of the pre-printed wire frame and the packaging material substantially encapsulating said cap.

31. (previously presented) The semiconductor die package according to claim 30, wherein the cap is attached to the pre-printed frame by a polyimide adhesive.

32. (previously presented) The semiconductor die package according to claim 28, wherein the die carrier has a first opening larger than the one or more sensors but smaller than the semiconductor die and has one or more external terminals, the top surface of the semiconductor die being attached to the bottom surface of the die carrier such that the one or more sensors are disposed below the first opening and an interface area is formed where the top surface of the semiconductor die extends beyond the first opening in the die carrier and each bond pad is coupled to a portion of one of the external terminals that is exposed on the bottom surface of the die carrier, and the semiconductor die package further comprising:

a sealing ring encapsulating the interface area; and

a packaging material encapsulating the bottom surface of the die carrier and a bottom surface of the semiconductor die.

33. (previously presented) The semiconductor die package according to claim 32, wherein the sealing ring comprises a first external sealing ring and a second internal sealing ring.
34. (previously presented) The semiconductor die package according to claim 32, wherein said sealing ring and/or said packaging material comprise a thixotropic epoxy-based material.
35. (previously presented) The semiconductor die package according to claim 32, wherein each bond pad is coupled to one of the external pads on the bottom surface of the die carrier by a solder bump.
36. (previously presented) The semiconductor die package according to claim 32, wherein the die carrier comprises a substrate and each external terminal comprises a bond pad formed on a top surface of the substrate.
37. (previously presented) The semiconductor die package according to claim 32, wherein the one or more sensors are covered with a protective layer.
38. (previously presented) The semiconductor die package according to claim 32, further comprising:
a transparent encapsulation material in the first opening and on the top surface of the semiconductor die.

39. (previously presented) The semiconductor die package according to claim 32, further comprising:

a lens disposed above the one or more sensors.

40. (previously presented) The semiconductor die package according to claim 28, further comprising:

a pre-printed frame having a recessed area which is larger than the semiconductor die and having one or more wire leads, a bottom surface of the semiconductor die being attached to a top surface of the recessed area of the pre-printed frame;

a wire bond coupling each bond pad to a portion of one of the external terminals near the recessed area;

a dam surrounding the recessed area to prevent packaging material from entering the recessed area;

a sealing material encapsulating each wire bond; and

a package material encapsulating the bottom surface of the pre-printed frame.

41. (previously presented) The semiconductor die package according to claim 40, further comprising:

a cap having a second opening similar in size to the first opening, the cap being attached to the top surface of the pre-printed wire frame and the packaging material substantially encapsulating said cap.

42. (previously presented) The semiconductor die package according to claim 42, wherein the cap is attached to the pre-printed frame by a polyimide adhesive.
43. (previously presented) The semiconductor die package according to claim 40, wherein said sealing ring and/or said packaging material comprise a thixotropic epoxy-based material.
44. (previously presented) The semiconductor die package according to claim 40, wherein the one or more sensors are covered with a protective layer.
45. (previously presented) The semiconductor die package according to claim 40, further comprising:
a transparent encapsulation material in the first opening and on the top surface of the semiconductor die.
46. (previously presented) The semiconductor die package according to claim 40, further comprising:
a lens disposed above the one or more sensors.